

CLAIMS

We claim:

1. An apparatus for mapping image shapes for a display device,
5 comprising:

an integrating rod;
means for selecting an image aspect ratio or shape; and
means for reshaping light exiting from the integrating rod depending upon
the image aspect ratio or shape.

10

2. The apparatus for mapping image shapes for a display device of
claim 1, wherein the integrating rod has a fully open entrance.

15 3. The apparatus for mapping image shapes for a display device of
claim 1, wherein the integrating rod has a partially open entrance.

4. The apparatus for mapping image shapes for a display device of
claim 3, wherein the integrating rod has an exit and the partially open entrance
has a reflective surface facing the exit.

20

5. The apparatus for mapping image shapes for a display device of
claim 3, wherein the integrating rod has an exit and the partially open entrance
has a partially reflective surface facing the exit.

25 6. The apparatus for mapping image shapes for a display device of
claim 1, wherein the means for selecting includes an image processor.

30 7. The apparatus for mapping image shapes for a display device of
claim 1, wherein the means for selecting is configured to automatically select an
image aspect ratio or shape without intervention by a user of the display device.

8. The apparatus for mapping image shapes for a display device of claim 1, wherein the means for selecting is configured to select an image aspect ratio or shape in response to an input provided by a user of the display device.

5 9. The apparatus for mapping image shapes for a display device of claim 1, wherein the means for reshaping includes a member with a plurality of differently shaped apertures formed therethrough.

10 10. The apparatus for mapping image shapes for a display device of claim 9, wherein the member includes a light reflecting surface facing an exit of the integrating rod.

15 11. The apparatus for mapping image shapes for a display device of claim 9, wherein the member includes a light absorbing surface facing an exit of the integrating rod.

20 12. The apparatus for mapping image shapes for a display device of claim 9, wherein the means for reshaping includes means for positioning the member adjacent an exit of the integrating rod depending upon the image aspect ratio or shape.

13. The apparatus for mapping image shapes for a display device of claim 9, wherein the apertures are positioned adjacent a periphery of the member.

25 14. The apparatus for mapping image shapes for a display device of claim 13, wherein the periphery of the member is generally circular in shape.

30 15. The apparatus for mapping image shapes for a display device of claim 1, wherein the means for reshaping includes a plurality of members and means for positioning the members adjacent an exit of the integrating rod depending upon the image aspect ratio or shape.

16. The apparatus for mapping image shapes for a display device of claim 15, wherein the means for positioning the members is configured to provide a variable aperture adjacent the exit of the integrating rod depending upon the image aspect ratio or shape.

5

17. The apparatus for mapping image shapes for a display device of claim 15, wherein the members include light reflecting surfaces facing an exit of the integrating rod.

10

18. The apparatus for mapping image shapes for a display device of claim 15, wherein the members include light absorbing surfaces facing an exit of the integrating rod.

15

19. The apparatus for mapping image shapes for a display device of claim 1, wherein the means for reshaping includes an anamorphic lens selected and positioned adjacent an exit of the integrating rod depending upon the image aspect ratio or shape.

20. A display device, comprising:

20

a light source;

a light modulator;

a projection lens adjacent the light modulator;

an integrating rod adjacent the light source; and

a variable exit aperture operatively positioned between the integrating rod

25

and the light modulator, the variable exit aperture being configured for mapping one of a plurality of different image aspect ratios or shapes onto the light modulator.

21. The display device of claim 20, further comprising:

30

means for selecting one of the plurality of different image aspect ratios or shapes.

22. The display device of claim 20, wherein the integrating rod has a fully open entrance.

23. The display device of claim 20, wherein the integrating rod has a 5 partially open entrance.

24. The display device of claim 23, wherein the integrating rod has an exit and the partially open entrance has a reflective surface facing the exit.

10 25. The display device of claim 23, wherein the integrating rod has an exit and the partially open entrance has a partially reflective surface facing the exit.

26. The display device of claim 20, wherein the variable exit aperture is provided by one or more members.

15 27. The display device of claim 26, wherein the one or more members include a light reflecting surface facing an exit of the integrating rod.

28. The display device of claim 26, wherein the one or more members 20 include a light absorbing surface facing an exit of the integrating rod.

29. The display device of claim 26, wherein the variable exit aperture includes means for positioning the one or more members adjacent an exit of the integrating rod depending upon a selected image aspect ratio or shape.

25 30. The display device of claim 20, wherein the variable exit aperture is provided by an anamorphic lens selected and positioned adjacent an exit of the integrating rod depending upon a selected image aspect ratio or shape.

30 31. The display device of claim 21, wherein the means for selecting includes an image processor.

32. The display device of claim 21, wherein the means for selecting is configured to automatically select an image aspect ratio or shape without intervention by a user of the display device.

5 33. The display device of claim 21, wherein the means for selecting is configured to select an image aspect ratio or shape in response to an input provided by a user of the display device.

10 34. A method of mapping images for a display device with an integrating rod, comprising:

identifying an aspect ratio or shape for an image to be projected by the display device; and

15 positioning an object with a plurality of differently shaped and/or sized apertures adjacent an exit of the integrating rod depending upon the aspect ratio or shape to selectively obstruct portions of the exit of the integrating rod.

35. A method of mapping images for a display device with an integrating rod, comprising:

20 identifying an aspect ratio or shape for an image to be projected by the display device; and

positioning a plurality of objects adjacent an exit of the integrating rod depending upon the aspect ratio or shape to selectively obstruct portions of the exit of the integrating rod.

25 36. A method for using a display device including a light modulator, comprising:

identifying an active area aspect ratio or shape for an image to be projected by the display device; and

30 providing to the display device an input signal that initiates automatic mapping by the display device of the active area aspect ratio or shape onto the light modulator.

37. A method for using a display device including a light modulator, comprising:

identifying an active area aspect ratio or shape for an image to be projected by the display device; and

5 repositioning one or more components of the display device to occlude portions of the light modulator depending upon the active area aspect ratio or shape.

38. An apparatus for mapping image shapes for a display device, 10 comprising:

an illuminating light source;

means for selecting an image aspect ratio or shape; and

means for reshaping light exiting from the illuminating light source depending upon the image aspect ratio or shape.